

	U.S. ENVIRONMENTAL PROTECTION AGENCY Cooperative Agreement		GRANT NUMBER (FAIN): 83595001	DATE OF AWARD 08/30/2016	
			MODIFICATION NUMBER: 0 PROGRAM CODE: RD		
			TYPE OF ACTION New		MAILING DATE 09/06/2016
			PAYMENT METHOD: ACH		ACH# 0070
RECIPIENT TYPE: State Institution of Higher Learning			Send Payment Request to: Las Vegas Finance Center		
RECIPIENT: University of Texas at Austin 101 East 27th Street Suite 4.300 Austin, TX 78712-1500 Personal Matters / Ex. 6			PAYEE: Associate Director, Office of Sponsored Projects The University of Texas, Austin 101 E. 27th Street Suite 4.300 Austin, TX 78712-1500		
PROJECT MANAGER Ben Hodges The University of Texas, Austin 10100 Burnet Rd. Bldg 119 Austin, TX 78758-4445 E-Mail: hodges@utexas.edu Phone: 512-471-3131		EPA PROJECT OFFICER Michael Hiscock 1200 Pennsylvania Ave, NW, 8721P Washington, DC 20460 E-Mail: hiscock.michael@epa.gov Phone: 202-564-4453		EPA GRANT SPECIALIST Robin Holder 1200 Pennsylvania Ave., NW Washington, DC 20460, 3903R E-Mail: holder.robin@epa.gov Phone: 202-564-5310	
PROJECT TITLE AND DESCRIPTION Crowd-sourced models for sustainable water infrastructure The proposed project focuses on developing a Center for sustainable water infrastructure modeling, encompassing research, support and code development and community outreach. The project also proposes to implement a community-based approach to model development and management that ensures water infrastructure model code is high quality and controlled, but advances and evolves based on crowd-sourced contributions.					
BUDGET PERIOD 09/01/2016 - 08/31/2021		PROJECT PERIOD 09/01/2016 - 08/31/2021		TOTAL BUDGET PERIOD COST \$3,999,803.00	
				TOTAL PROJECT PERIOD COST \$3,999,803.00	
NOTICE OF AWARD					
Based on your Application dated 03/10/2014 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards \$1,712,687. EPA agrees to cost-share 100.00% of all approved budget period costs incurred, up to and not exceeding total federal funding of \$1,712,687. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.					
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)			AWARD APPROVAL OFFICE		
ORGANIZATION / ADDRESS Grants and Interagency Agreement Management Division 1200 Pennsylvania Ave, NW Mail code 3903R Washington, DC 20460			ORGANIZATION / ADDRESS Environmental Protection Agency Office of Research and Development 1200 Pennsylvania Ave, NW Washington, DC 20460		
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY					
Digital signature applied by EPA Award Official for Jill Young - Chief - Grants Management Branch LaShaun Phillips - Award Official delegate				DATE 08/30/2016	

EPA Funding Information

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FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$	\$ 1,712,687	\$ 1,712,687
EPA In-Kind Amount	\$	\$	\$ 0
Unexpended Prior Year Balance	\$	\$	\$ 0
Other Federal Funds	\$	\$	\$ 0
Recipient Contribution	\$	\$ 0	\$ 0
State Contribution	\$	\$ 0	\$ 0
Local Contribution	\$	\$ 0	\$ 0
Other Contribution	\$	\$ 0	\$ 0
Allowable Project Cost	\$ 0	\$ 1,712,687	\$ 1,712,687

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.509 - Science to Achieve Results (STAR) Program	Clean Water Act: Sec. 104 National Environmental Policy Act: Sec. 102(2)(F)	2 CFR 200 2 CFR 1500 40 CFR 33 and 40 CFR 40

Fiscal									
Site Name	Req No	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
-	1526T6G043	1516	C	26T6000	202FK7	4142	-	26A6A	470,000
-	1526T6G043	1516	C	26T6000	201FK7	4142	-	26A6A	333,000
-	1526T6G043	1617	C	26T6000	201FK7	4142	-	26A6A	709,687
-	1526T6G043	1617	C	26T6000	202FK7	4142	-	26A6A	200,000
									1,712,687

Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$1,168,745
2. Fringe Benefits	\$350,625
3. Travel	\$32,000
4. Equipment	\$0
5. Supplies	\$37,949
6. Contractual	\$0
7. Construction	\$0
8. Other	\$1,429,381
9. Total Direct Charges	\$3,018,700
10. Indirect Costs: <u>55.00%</u> Base <u>MTDC</u>	\$981,103
11. Total (Share: Recipient <u>0.00</u> % Federal <u>100.00</u> %.)	\$3,999,803
12. Total Approved Assistance Amount	\$3,999,803
13. Program Income	\$449,550
14. Total EPA Amount Awarded This Action	\$1,712,687
15. Total EPA Amount Awarded To Date	\$1,712,687

Administrative Conditions

A. General Terms and Conditions

The recipient agrees to comply with the current EPA general terms and conditions available at: <https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-march-29-2016-or-later>. These terms and conditions are in addition to the assurances and certifications made as part of the award and the terms, conditions or restrictions cited throughout the award.

The EPA repository for the general terms and conditions by year can be found at: <http://www2.epa.gov/grants/grant-terms-and-conditions>

B. In accordance with Section 2(d) of the Prompt Payment Act (P.L. 97-177), Federal funds may not be used by the recipient for the payment of interest penalties to contractors when bills are paid late nor may interest penalties be used to satisfy cost sharing requirements. Obligations to pay such interest penalties will not be obligations of the United States.

C. The recipient understands that none of the funds for this project (including funds contributed by the recipient as cost sharing) may be used to pay for the travel of Federal employees or for other costs associated with Federal participation in this project. Except however, if a Federal agency is selected through the recipient's procurement process to carry out some of the work as a contractor to the recipient, funds may be used to allow necessary Federal travel and other costs associated with Federal participation in this project.

D. The recipient understands that all foreign travel **funded with Federal money** must comply with the Fly America Act. All travel must be on U.S. air carriers certificated under 49 U.S.C. Section 1371, to the extent that service by such carriers is available even if foreign air carrier costs are less than the American air carrier.

E. UTILIZATION OF SMALL, MINORITY AND WOMEN'S BUSINESS ENTERPRISES (MBE/WBE)

GENERAL COMPLIANCE, 40 CFR, Part 33

The recipient agrees to comply with the requirements of EPA's Disadvantaged Business Enterprise (DBE) Program for procurement activities under assistance agreements, contained in 40 CFR, Part 33.

REPORTING PROVISION

MBE/WBE reporting is required annually for assistance agreements where there are funds budgeted for procuring construction, equipment, services and supplies, including funds budgeted for direct procurement by the recipient or procurement under subawards or loans in the "Other" category, that exceed the threshold amount of \$150,000, including amendments and/or modifications.

Based on EPA's review of the planned budget, this award does not meet the condition above and is not subject to the reporting requirements of the Disadvantaged Business Enterprise (DBE) Program. However, if during the performance of the award the total of all funds expended for direct procurement by the recipient and procurement under subawards or loans in the "Other" category exceeds \$150,000, annual reports will be required in accordance with the reporting paragraph below and you are required to notify your grant specialist for additional instructions.

The recipient also agrees to request prior approval from EPA for procurements that may activate DBE Program reporting requirements.

This provision represents an approved deviation from the MBE/WBE reporting requirements as described in 40 CFR, Part 33, Section 33.502; however, the other requirements outlined in 40 CFR Part 33 remain in effect, including the Good Faith Efforts requirements as described in 40 CFR Part 33 Subpart C and Fair Share Objectives negotiation as described in 40 CFR Part 33 Subpart D and explained below.

MBE/WBE REPORTING, 40 CFR, Part 33, Subpart E

When required, MBE/WBE reports must be submitted annually. The recipient agrees to complete and submit a "MBE/WBE Utilization Under Federal Grants, Cooperative Agreements and Interagency Agreements" report (EPA Form 5700-52A) on an annual basis. All procurement actions are reportable, not just that portion which exceeds \$150,000.

When completing the annual report, recipients are instructed to check the box titled "annual" in section 1B of the form. For the final report, recipients are instructed to check the box indicated for the "last report" of the project in section 1B of the form. Annual reports are due by October 30th of each year. Final reports are due by October 30th or 90 days after the end of the project period, whichever comes first.

The reporting requirement is based on total procurements. Recipients with expended and/or budgeted funds for procurement are required to report annually whether the planned procurements take place during the reporting period or not. If no budgeted procurements take place during the reporting period, the recipient should check the box in section 5B when completing the form.

MBE/WBE reports should be sent to **Veronica Parker, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW Mail Code 3903R, Room 51225, Washington, DC 20460, 202-564-5347**. If your organization prefers to send electronic versions of the completed report, they can be submitted to the following email address: MBE.WBE@epa.gov. The current EPA Form 5700-52A can be found at the EPA Office of Small Business Program's Home Page at http://www.epa.gov/osbp/dbe_reporting.htm

FAIR SHARE OBJECTIVES, 40 CFR, Part 33, Subpart D

A recipient must negotiate with the appropriate EPA award official, or his/her designee, fair share objectives for MBE and WBE participation in procurement under the financial assistance agreements.

In accordance with 40 CFR, Section 33.411 some recipients may be exempt from the fair share objectives requirements as described in 40 CFR, Part 33, Subpart D. Recipients should work with their DBE coordinator, if they think their organization may qualify for an exemption.

Accepting the Fair Share Objectives /Goals of Another Recipient

The dollar amount of this assistance agreement, or the total dollar amount of all of the recipient's financial assistance agreements in the current federal fiscal year from EPA is \$250,000, or more. The recipient accepts the applicable MBE/WBE fair share objectives/goals negotiated with EPA by the **Texas Water Development Board** as follows:

	MBE	WBE
Construction	12.94%	8.72%
Equipment	9.68%	9.34%
Services	10.84%	5.72%
Supplies	7.12%	5.39%

By signing this financial assistance agreement, the recipient is accepting the fair share objectives/goals stated above and attests to the fact that it is purchasing the same or similar construction, supplies, services and equipment, in the same or similar relevant geographic buying market as the **Texas Water Development Board**.

Negotiating Fair Share Objectives /Goals, 40 CFR, Section 33.404

The recipient has the option to negotiate its own MBE/WBE fair share objectives/goals. If the recipient wishes to negotiate its own MBE/WBE fair share objectives/goals, the recipient agrees to submit proposed MBE/WBE objectives/goals based on an availability analysis, or disparity study, of qualified MBEs and WBEs in their relevant geographic buying market for construction, services, supplies and equipment.

The submission of proposed fair share goals with the supporting analysis or disparity study means that

the recipient is **not** accepting the fair share objectives/goals of another recipient. The recipient agrees to submit proposed fair share objectives/goals, together with the supporting availability analysis or disparity study, to the Regional MBE/WBE Coordinator within 120 days of its acceptance of the financial assistance award. EPA will respond to the proposed fair share objective/goals within 30 days of receiving the submission. If proposed fair share objective/goals are not received within the 120 day time frame, the recipient may not expend its EPA funds for procurements until the proposed fair share objective/goals are submitted.

SIX GOOD FAITH EFFORTS, 40 CFR, Part 33, Subpart C

Pursuant to 40 CFR, Section 33.301, the recipient agrees to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, and to require that sub-recipients, loan recipients, and prime contractors also comply. Records documenting compliance with the six good faith efforts shall be retained:

- (a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- (b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- (c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- (d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
- (e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- (f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

CONTRACT ADMINISTRATION PROVISIONS, 40 CFR, Section 33.302

The recipient agrees to comply with the contract administration provisions of 40 CFR, Section 33.302.

BIDDERS LIST, 40 CFR, Section 33.501(b) and (c)

Recipients of a Continuing Environmental Program Grant or other annual reporting grant, agree to create and maintain a bidders list. Recipients of an EPA financial assistance agreement to capitalize a revolving loan fund also agree to require entities receiving identified loans to create and maintain a bidders list if the recipient of the loan is subject to, or chooses to follow, competitive bidding requirements. Please see 40 CFR, Section 33.501 (b) and (c) for specific requirements and exemptions.

F. EPA is partially funding this budget period and will consider funding the balance of the budget request contingent upon satisfactory progress as certified by the EPA Project Officer, the availability of funds, and EPA priorities. It is understood that the scope of work will be renegotiated to reflect the amount awarded if additional funds are not available.

G. In accordance with 2 CFR Part 200.307(e)(2) and 2 CFR Part 1500.7(b), program income shall be added to funds committed to the project by EPA and used to further eligible project or program objectives. Program income generated in excess of the amount specified in the EPA approved budget is also subject

to 2 CFR 200.307(e)(2) and 2 CFR 1500.7(b), and may be added to the EPA funds to be used for the purposes and under the conditions of the EPA agreement.

In accordance with 2 CFR Part 200.307(b), costs of generating program income may be deducted from the gross income to determine net program income provided those costs are not charged to a Federal financial assistance agreement.

Programmatic Conditions

A. Cybersecurity Grant Condition for Other Recipients , Including Intertribal Consortia

(a) The recipient agrees that when collecting and managing environmental data under this assistance agreement, it will protect the data by following all applicable State or Tribal law cybersecurity requirements.

(b) (1) EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement, are secure. For purposes of this Section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition.

If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer (PO) no later than 90 days after the date of this award and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data.

(2) The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in (b)(1) if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by including this requirement in subaward agreements; and during subrecipient monitoring deemed necessary by the recipient under 2 CFR 200.331(d), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement

B. Geospatial Data Standards

All geospatial data created must be consistent with Federal Geographic Data Committee (FGDC) endorsed standards. Information on these standards may be found at www.fgdc.gov.

C. In accordance with 2 CFR 200.328, the recipient agrees to notify the EPA Project Officer in writing about research misconduct involving research activities that are supported in whole or in part with EPA funds under this project. EPA defines research misconduct as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results [65 FR 76262. I], or ordering, advising or suggesting that subordinates engage in research misconduct. The recipient agrees to:

(1) Immediately notify the EPA Project Officer who will then inform the EPA Office of Inspector General (OIG) if, at any time, an allegation of research misconduct falls into one of the categories listed below:

A. Public health or safety is at risk.

B. Agency resources or interests are threatened.

C. Circumstances where research activities should be suspended.

D. There is a reasonable indication of possible violations of civil or criminal law.

E. Federal action is required to protect the interests of those involved in the investigation.

F. The research entity believes that the inquiry or investigation may be made public prematurely so that appropriate steps can be taken to safeguard evidence and protect the rights of those involved.

G. Circumstances where the research community or public should be informed. [65 FR 76263.III]

(2) Report other allegations to the OIG when they have conducted an inquiry and determined that there is sufficient evidence to proceed with an investigation. [65 FR 76263. III]

D. Advisory Committee

- a. The Center Director will establish and maintain a **Science Advisory Committee** (SAC). EPA recommends that the SAC consist of approximately five to seven voting individuals who are experts in technical fields related to the goals of the Center. The function of this Committee is to assist in evaluating the merit, value and contribution of research projects, and the relevance and importance of individual organizational elements to accomplishing the overall goals of the Center. The Committee will elect a chair and vice-chair from among its members. The EPA Project Officer and EPA cooperative agreement collaborators will serve as non-voting observers. The SAC must meet at least once a year to discuss progress of Center activities unless a different schedule is approved by the EPA. Within 30 days of the award of this project, the Center Director will submit a list of the nominees for the SAC to the Project Officer. One of the SAC members will serve as Chair of the committee. One of the SAC members will serve as Chair of the committee.
- b. The SAC will consist of members representing a balance of disciplines addressed in the Center's research program. It shall include at least one representative from another research center and at least one EPA observer. The committee should include members i) with software development expertise and experience, ii) with expertise in urban water sustainability issues facing drinking water distribution systems and storm and sewer systems, and iii) with sufficient experience to advise the Center on the Center's plans towards developing a self-sustaining Center at the end of the project period.
- c. The SAC will provide written recommendations to the Center Director within 45 days of the SAC meeting. The Center Director will prepare a written response to the SAC recommendations within 45 days of receipt of the letter from the Chair unless a different schedule is agreed to by the Project Officer. The Center Director will provide this response to the Project Officer and the SAC Chair. The Center Director must maintain records of any decisions he or she proposes which deviate from the recommendations of the SAC.

E. Reporting

- a. **Overview.** The recipient agrees to provide EPA's Project Officer *annual Center progress reports* with associated *annual research project summaries*, and a *final Center report* with *final project summaries*, along with a copy of, or reference for, any papers resulting from the research conducted. Requirements for the content of reports and summaries are stated below. Any detail specific to this Center in addition to those below may be established by the Project Officer and negotiated with the Center Director in advance, provided the frequency of reporting is not more than quarterly.
- b. **Annual Center Progress Reports .** The recipient agrees to submit annual progress reports to the EPA Project Officer within 90 calendar days after the end of each reporting period. If the agreement was partially funded, so that an additional increment of funding is to be provided, EPA may elect to not provide further funding until the recipient has submitted the required annual progress report. EPA may withhold payment if progress reports are not submitted by the due date. In addition, if EPA determines that the recipient has not made sufficient progress toward completing its research, EPA may terminate the assistance agreement. Sufficient progress is demonstrated by the grantee meeting the milestones described in the research plan to the maximum extent practicable, while taking into account any extenuating factors that may have delayed progress. The reporting period begins at the project start date, or, for subsequent years, on the annual anniversary of the start date. Annual reports should discuss the activities of the *Center as a whole*. These reports shall include:

- (1) A discussion of the research performed during the reporting period and results (outputs/outcomes) that have been generated.
- (2) A discussion on difficulties the Center has (or might) encountered in carrying out its mission, and remedial actions (to be) taken. If the goals/hypotheses of any project funded under this Center have been modified from the original application, provide the revised goals and discuss the reason for the change. A discussion of any problems, delays, or adverse conditions which may materially impair the ability to meet the results (outputs/outcomes) specified in the application.
- (3) A discussion of any absence or changes of key personnel involved in the individual projects or Center management.
- (4) A discussion of expenditures to date and an explanation of any costs which are significantly higher or lower than originally estimated.
- (5) Statements addressing how the quality assurance requirements of 2 CFR 1500.11 and the agreement are being met, especially focusing on the system in place that assures the quality of environmental measurements, data generation and use.
- (6) Results (outputs/outcomes) to date, emphasizing findings and their significance to drinking water distribution systems and storm and sewer systems, their relationship to the general goals of the award, their relevance to the Agency's mission, and their potential practical applications.
- (7) Assurance that research misconduct has not occurred during the reporting period. EPA defines research misconduct as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results [65 FR 76262. I], or ordering, advising or suggesting that subordinates engage in research misconduct.
- (8) Planned activities for the subsequent reporting period.
- (9) Publications arising from this project. Copies of publications and reprints which have not previously been submitted to the Agency should be enclosed with the report. The publication list should be cumulative of previous Annual Reports.

c. **Annual Project Summaries.** For *each* project funded under this grant, an annual project summary must be submitted with the annual Center progress report. These will be placed on the EPA/NCER website. EPA will not alter the content of a summary without consultation with the Principal Investigator(s). The summary should be submitted as a word document to facilitate uploading to the website, should be in the format shown in **Attachment A**, and need not be more than two pages.

d. **Final Center Report.** The recipient agrees to submit a final report to the EPA Project Officer within 90 calendar days after the expiration of the project period. The Project Officer may require clarifications of the final report before the report is accepted. These reports shall include:

- (1) A discussion of the accomplishments/activities (outputs/outcomes) of the Center during the entire period of funding, describing achievements with respect to the mission of the Center, and incorporating quality assurance considerations.
- (2) Details of any significant technical aspects of funded projects (both negative and positive) not included in the final *project* summaries.
- (3) An evaluation of (a) the technical effectiveness and economic feasibility of the methods or techniques investigated and (b) an explanation of how the funded research adds to the understanding of or solutions to problems facing drinking water distribution systems and storm and sewer systems, written in terms understandable by the educated layman.
- (4) Publications arising from this project. Copies of publications and reprints which have not previously been submitted to the Agency should be enclosed with the report. The publication list should be cumulative of previous Annual Reports.
- (5) For projects involving computer modeling, if requested by the PO, the recipient agrees to provide the following information with the final report:
 - (a) Model description, key assumptions, version, source and intended use;
 - (b) Performance criteria for the model related to the intended use;

- (c) Test results to demonstrate the model performance criteria were met (e.g., code verification, sensitivity analyses, history matching with lab or field data, as appropriate);
 - (d) Theory behind the model, expressed in non-mathematical terms;
 - (e) Mathematics to be used, including formulas and calculation methods;
 - (f) Whether or not the theory and mathematical algorithms were peer reviewed, and, if so, include a summary of theoretical strengths and weaknesses;
 - (g) Number and uncertainty associated with parameters (how data was selected/obtained and assessed to assure it met requirements, or, documentation of the weakness due to known uncertainty and variability);
 - (h) Input data requirements and how data will be selected/obtained and later assessed to assure it met requirements, or, documentation of the weakness due to known uncertainty and variability;
 - (i) Hardware requirements; and
 - (j) Documentation (e.g., users' guide, journal publications, model code).
- e. **Final Project Summaries.** The recipient agrees to submit project summaries for each funded research study with the final Center report. Summaries will be placed on the EPA/NCER website along with a list of publications. EPA will not alter the content of a summary without consultation with the Principal Investigator(s). Each summary should be submitted in the format shown in ***Attachment B***, recommended at three to five pages.
- f. **Form of Reports.** The recipient agrees to provide final and annual reports and associated summaries in an electronic format. The electronic versions shall be submitted in PC format, using commonly available word processing software or PDF. When requested by the Project Officer, these reports shall also be submitted in hardcopy format.

F. Human Subjects

No research involving human subjects will be conducted under this agreement without prior written approval of the EPA to proceed with that research. The recipient agrees to comply with all applicable provisions of EPA Regulation 40 CFR 26 (Protection of Human Subjects). This includes, at Subpart A, the Basic Federal Policy for the Protection of Human Research Subjects, also known as the Common Rule. It also includes, at Subparts B, C, and D, prohibitions and additional protections for children, nursing women, pregnant women, and fetuses in research conducted or supported by EPA.

The recipient further agrees to comply with EPA's procedures for oversight of the recipient's compliance with 40 CFR 26, as given in EPA Order 1000.17 Change A1 (Policy and Procedures on Protection of Human Research Subjects in EPA Conducted or Supported Research). As per this order, no human subject may be involved in any research conducted under this assistance agreement, including recruitment, until the research has been approved or determined to be exempt by the EPA Human Subjects Research Review Official (HSRRO) after review of the approval or exemption determination of the Institutional Review Board(s) (IRB(s)) with jurisdiction over the research under 40 CFR 26. For HSRRO approval, the recipient must forward to the Project Officer: (1) copies of all documents upon which the IRB(s) with jurisdiction based their approval(s) or exemption determination(s), (2) copies of the IRB approval or exemption determination letter(s), (3) copy of the IRB-approved consent forms and subject recruitment materials, if applicable, and (4) copies of all supplementary IRB correspondence.

Following the initial approvals indicated above, the recipient must, as part of the annual report(s), provide evidence of continuing review and approval of the research by the IRB(s) with jurisdiction, as required by 40 CFR 26.109(e). Materials submitted to the IRB(s) for their continuing review and approval are to be provided to the Project Officer upon IRB approval. During the course of the research, investigators must promptly report any unanticipated problems involving risk to subjects or others according to requirements set forth by the IRB. Additionally, investigators are to comply with guidance the EPA HSRRO may provide regarding routine human subjects research monitoring and reporting of unanticipated problems.

G. Quality Assurance/Quality Control Program

- a. The recipient must provide acceptable quality assurance and quality control documentation to the EPA Project Officer within 90 days of the acceptance of this agreement. Acceptable documentation will be a Quality Management Plan (QMP). A QMP is a detailed policy statement describing the management and technical activities necessary to plan, implement and assess the effectiveness of the Quality Assurance (QA) system and Quality Control (QC) operations within the Center. For guidance on writing a QMP for NCER, see <http://www.epa.gov/sites/production/files/2015-05/documents/g1star0607.pdf>. If additional guidance is needed, see the EPA's full guidance on QMPs at <http://www.epa.gov/quality/epa-quality-management-tools-organizations-and-programs> <http://www.epa.gov/quality/qmps.html>.
- b. The Center Director will designate one individual within the organization to serve as Quality Assurance Manager (QAM) for the Center. This individual is responsible for implementing the Center's quality system and coordinating the QA/QC activities within the Center. The QAM must keep complete files on all quality documentation for the Center (e.g. QMP for the Center, various QA/QC plans for each project, audit records, etc.).
- c. The recipient will include a software-specific quality assurance plan within the QMP, which includes specifications and requirements for software development including:
 - i. Utilizing community software development strategies that coordinate with outside organizations that share similar goals and objectives.
 - ii. Committing to only use freely available open-source tools and software.
 - iii. Provide and maintain an online open source code repository which is openly accessible, well-documented, and community-based.
 - iv. Clear, concise software design and documented source code.
 - v. Full use of open source and agile software development techniques. Comprehensive developer documentation that includes object diagrams, automatically generated documentation describing software objects and functions, and automatically embedded textual descriptions explaining purpose and rationale for particular software design.

H. Publications, Abstracts and/or Other Public Release of Results

Publications under Cooperative Agreements.

Subject to [2 CFR 200.315] the recipient may publish and distribute scientific, technical and other works developed under this cooperative agreement. There are special requirements under 40 CFR 40.160-5 when a publication is also a final report for a research cooperative agreement. Any documents developed under this agreement for distribution to the public or inclusion in a scientific, technical or other journal shall include one of the following statements, depending upon the outcome of the EPA review process.

Alternate A. Documents that have not been reviewed by EPA. "This publication [article] was developed under Cooperative Agreement No. _____ awarded by the U.S. Environmental Protection Agency to [name of recipient]. It has not been formally reviewed by EPA. The views expressed in this document are solely those of [name of recipient or names of authors] and do not necessarily reflect those of the Agency. EPA does not endorse any products or commercial services mentioned in this publication."

Alternate B. Documents that have been reviewed by EPA, but the recipient declines to accommodate suggested material changes identified by the Agency. "This publication [article] was developed under Cooperative Agreement No. _____ awarded by the U.S. Environmental Protection Agency to [name of recipient]. However, the views expressed in this document are solely those of [name of recipient or names of authors] and do not necessarily reflect those of the Agency. EPA does not endorse any products or commercial services mentioned in this publication."

Alternate C. Documents that have been reviewed by EPA and the material changes suggested by the Agency were accommodated. "This publication [article] was developed under Cooperative Agreement No. _____ awarded by the U.S. Environmental Protection Agency to [name of recipient]. EPA made comments and suggestions on the document intended to improve the scientific analysis and technical accuracy of the document. However, the views expressed in this document are those of [name of recipient or names of authors] and do not necessarily reflect those of the Agency. EPA does not endorse any products or commercial services mentioned in this publication."

Alternate D. Final Reports on research cooperative agreements subject to 40 CFR 40.160-5. "This final report was developed under Cooperative Agreement No. _____ awarded by the U.S. Environmental Protection Agency to [name of recipient]. EPA made comments and suggestions on the document intended to improve the scientific analysis and technical accuracy of the document. These comments are included in the report. However, the views expressed in this document are those of [name of recipient] and do not necessarily reflect those of the Agency. EPA does not endorse any products or commercial services mentioned in this publication."

The Center Director is responsible for ensuring that all members of the project team comply with these acknowledgement requirements.

Additionally, the above acknowledgement language should be included in any presentations, posters, websites, and media interviews.

The recipient is strongly encouraged to continue to notify the Project Officer of any papers that are published based on the research under the agreement. EPA intends to post references to all publications resulting from the agreement on the EPA/NCER website.

The recipient agrees to submit one copy of each peer reviewed journal article(s) resulting from this research, in addition to the final technical report.

I. Peer Reviews

- a. EPA may elect to undertake periodic **independent peer evaluations** of the Center. At least 60 days notice will be provided before any such review is conducted. It is expected that the Center Director will cooperate fully with the peer review teams.
- b. When required, an **activity status statement** must be submitted to the EPA Project Officer describing how the recommendations by any peer review have been implemented. This applies to peer reviews conducted by EPA before the award or during performance. The Center Director and EPA Project Officer will agree on the date the statement is due and the specific recommendations that must be addressed.

J. Other Recipient Responsibilities

- a. The Center Director and other appropriate Center personnel must attend an **annual meeting** with EPA personnel. The date and location of this annual meeting will be set by the EPA Project Officer, in consultation with the Center Director. The SAC chair is also requested to participate in this annual meeting.
- b. No institution may be added to or subtracted from the Center without the express written concurrence of the EPA Project Officer.
- c. No foreign travel will be funded by this agreement without prior written approval of the EPA. The recipient agrees to notify the EPA Project Officer at least 60 days before any proposed foreign

travel to allow the EPA sufficient time to obtain the appropriate clearances. The recipient understands that funds awarded under this assistance agreement may not be used for international activities unless prior written notification is received from the EPA Project Officer that the international activities have been approved by EPA's Office of International and Tribal Affairs. For purposes of this condition, international activities include any foreign travel paid for with EPA funds. In addition, the recipient understands that all foreign travel must comply with the Fly America Act. All travel must be on U.S. air carriers certificated under 49 U.S.C. Section 1371, to the extent that service by such carriers is available even if foreign air carrier costs are less than the American Carrier.

- d. **Full funding of projects at award**. NCER's policy is that where projects are awarded that are supported by EPA funds, adequate funds must be set aside by the Center at the initiation of each project, in order to ensure completion without additional funding. This requirement may be met totally by EPA funds, or by supplemental funding that has been committed by or is anticipated from other sources. While this may limit the number of projects which may be started at any given time, it enables the Center to focus its efforts and assure that each project will be pursued to completion.
- e. In accordance with 40 CFR 30.25(f), the recipient may initiate a one-time no-cost extension of this project of up to 12 months by notifying EPA in writing, with the supporting reasons and revised project period end date, at least ten calendar days before the project period end date specified in the award agreement. Notwithstanding 40 CFR 30.25(f), if the extension causes the project period to exceed five years or is in addition to a previously requested one-time no-cost extension of this project, the extension should be requested at least 75 calendar days in advance of the project period end date and approved by EPA. These approvals are necessary due to EPA Office of Research and Development policy.
- f. **Program Income**. Program income is "gross income received by the grantee or subgrantee directly generated by a grant supported activity, or earned only as a result of the grant agreement during the grant period." Sources of program income include fees for services performed under the agreement, such as registration at conferences, and proceeds from sales of publications developed with assistance funds. If program income is generated under this agreement, the recipient will allocate the income by adding it to funds committed to the agreement (i.e., roll the funds back into the research effort).

K. Software Development and Licensing

The Center shall agree that all future software developed cooperatively by the Center and EPA, any software code contributed to the Center for this purpose by outside developers, and any current public domain software will remain in the public domain and not be subject to any copyright or licensing restrictions. This would not apply to any third party software libraries used by the Center that might be subject to their own specific licensing agreements. The following wording, taken from <http://unlicense.org/> shall appear either at the top of each software file or in a separate LICENSE file for each project undertaken in cooperation with EPA by the Center:

- a. This is free and unencumbered software released into the public domain.
- b. Anyone is free to copy, modify, publish, use, compile, sell, or distribute this software, either in source code form or as a compiled binary, for any purpose, commercial or non-commercial, and by any means.
- c. In jurisdictions that recognize copyright laws, the author or authors of this software dedicate any and all copyright interest in the software to the public domain. We make this dedication for the benefit of the public at large and to the detriment of our heirs and successors. We intend this dedication to be an overt act of relinquishment in perpetuity of all present and future rights to this software under copyright law.
- d. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS BE LIABLE FOR ANY CLAIM,

DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. For more information, please refer to <http://unlicense.org/>

- e. In addition, all contributors of code to the Center's software projects shall include the following statement with their contribution:

I dedicate any and all copyright interest in this software to the public domain. I make this dedication for the benefit of the public at large and to the detriment of my heirs and successors. I intend this dedication to be an overt act of relinquishment in perpetuity of all present and future rights to this software under copyright law.

L. Maintain a Center Website

The Center is expected to develop and maintain a Center website, providing information about the Center program, progress and personnel. Websites must acknowledge EPA grant funding and grant number. Use of the EPA logo or seal is not authorized without permission by EPA's Office of Public Affairs and must adhere to Agency's EPA Seal and Logo guidance.

M. Cooperative Agreements

- a. EPA investigators from the EPA's ORD/NRMRL/WSWRD and ORD/NHSRC/WIPD will be substantially involved in the proposed research. The nature of these interactions is set forth below.

Lab/Division	Project Title	Research Contribution
1. Michael Tryby, NRMRL/Water Supply Water Resource Division, Cincinnati, OH	1. RD83595001, A Sustainable Center for Crowd-Sourced Water Infrastructure Modeling (University of Texas at Austin, Ben R. Hodges)	1. Tryby will work with the University of Texas at Austin providing expertise in drinking water distribution and urban drainage infrastructure modeling. He will contribute his knowledge of how SWMM and EPANET are structured and written.
2. Rob Janke, NHSRC/Water Infrastructure Protection Division, Cincinnati, OH	2. RD83595001, A Sustainable Center for Crowd-Sourced Water Infrastructure Modeling (University of Texas at Austin, Ben R. Hodges)	2. Janke will work with the University of Texas at Austin team providing expertise in water infrastructure security and water distribution system modeling. He will contribute his experience in managing numerous research efforts that have resulted in model based research products.

- b. When a change in the individuals involved or the nature of the interactions is anticipated, the recipient agrees to provide notification to the Project Officer 30 calendar days in advance by updating this table.

Attachment A

NCER Assistance Agreement Annual Project Summary

Period Covered by the Report: (insert reporting year)

Date of Report:

EPA Agreement Number:
Center Name:
Project Title:
Investigator(s):
Institution(s) of PI(s):
Research Category:
Project Period:
Objective of Research:
Progress Summary/Accomplishments (Outputs/Outcomes):
Publications/Presentations:
Future Activities:
Supplemental Keywords:
Relevant Web Sites:

Attachment B

NCER Assistance Agreement Final Project Summary

Period Covered by the Report:
Date of Final Report:
EPA Agreement Number:
Center Name:
Project Title:
Investigator(s):
Institution(s) of PI(s):
Research Category:
Project Period:
Objective of Research:
Summary of Findings (Outputs/Outcomes):
Publications/Presentations:
Supplemental Keywords:
Relevant Web Sites: